

## **II. VERSION WITH MARKINGS TO SHOW CHANGES MADE**

### **In the specification:**

Paragraph starting on line 6 of page 6:

The present invention is an improved table saw. Figure 1 is a front view of the preferred embodiment of the table saw 10 of the present invention. Table saw 10 includes fence assembly 12 and miter gauge assembly 14. Table saw 10 also includes a saw blade 16 with a guard 18, a table 20 with an upper surface 22, a base 24 and a front rail [26] **34**. Figure 2 is a side view of the preferred embodiment of the table saw 10 of the present invention. Figure 2 also shows handle cam [28] **46** and microadjust assembly 30 of the preferred embodiment of fence assembly 12 of table saw 10 of the present invention.

Paragraph starting on line 1 of page 7:

Handle cam 46 is operatively connected to the first end of [rod] fence lock **rod** 50. The second end of [rod] fence lock **rod** 50 is operatively connected to locking pawl 44. Locking pawl 44 is preferably constructed of a single material and slidably engages rear rail 36. However, locking pawl 44 can be constructed out of more than one material and can be formed into many different shapes.

Paragraph starting on line 6 of page 7:

Fence assembly 12 is locked into position on upper surface 22 of table 20 for a predetermined distance from saw blade 16 by movement of handle cam 46. When handle cam 46 is in its up position, there is no tension pressure applied to [rod] fence lock **rod** 50, and therefore, no clamping pressure applied to rear rail 36 by locking pawl 44. However, when handle cam 46 is pushed downward by an operator, the camming portion 52 of handle cam 46 provides a tension force to [rod] fence lock **rod** 50. The tension force applied to [rod] fence lock **rod** 50 causes locking pawl 44 to apply a clamping pressure to rear rail 36 and, thus, secures fence assembly 12 in place at a predetermined distance from saw blade 16. Handle cam 46 rotates within annular bearings 48, and therefore, annular bearings 48 provide the wear surface for handle cam 46. The use of the bearings 48 as the wear surfaces is an improvement over prior

art fence locking assemblies wherein the wear surface is a plate. The handle cam 46 and annular bearings 48 provide a smoother action and longer life over prior art fence assemblies having a plate as a wear surface.

**In the claims:**

45. (AMENDED) A fence assembly for supporting a workpiece relative to a saw blade of a saw, the fence assembly comprising:

a fence channel having first and second ends;

a head assembly coupled to the first end of the fence channel, the head assembly including a housing and a handle cam, the handle cam defining a handle portion [and] **extending from** a camming portion situated in the housing;

a locking pawl proximate the second end of the fence channel;

a rod interconnecting the camming portion and the locking pawl, **the rod having a first end connected to the camming portion at an off-center location and a second end connected to the locking pawl;** and

at least one annular bearing situated in the housing, the annular bearing receiving the camming portion such that the handle cam is rotatably supported only by the annular bearing to eliminate direct contact between the camming portion and the housing, wherein the camming portion rotates within the annular bearing upon actuation of the handle portion to move the rod, and thus the locking pawl, towards the head assembly.

50. (AMENDED) A table saw comprising:

a base;

a table connected to the base and having an upper surface;

a blade extending through the table;

a first rail connected to a first side of the table;

a second rail connected to a second side of the table;

a fence channel having first and second ends;

a head assembly coupled to the first end of the fence channel, the head assembly slidably received by the first rail and including housing and a handle cam, the handle cam defining a handle portion **extending from** [and] a camming portion situated in the housing;

a locking pawl proximate the second end of the fence channel;

a rod interconnecting the camming portion and the locking pawl, **the rod having a first end connected to the camming portion at an off-center location and a second end connected to the locking pawl**; and

at least one annular bearing situated in the housing, the annular bearing receiving the camming portion such that the handle cam is rotatably supported only by the annular bearing to eliminate direct contact between the camming portion and the housing, wherein the camming portion rotates within the annular bearing upon actuation of the handle portion to move the rod, and thus the locking pawl, towards the second rail to apply a clamping pressure to the second rail.

### **III. RESPONSE TO OFFICE ACTION**

This paper is submitted in response to the office action mailed on March 3, 2002, for the referenced case ("the office action"). Claims 45-52 are currently pending; claims 45 and 50 have been amended herein. Reconsideration of the present application is respectfully requested in light of the foregoing amendments and the following remarks.

#### ***Drawings***

Section 3 of the office action objected to the drawings for various informalities. Two sets of amended drawing figures 2, 4, 11 and 12 are enclosed, with the proposed amendments circled in red on one copy. More specifically, reference numbers 26 and 28 have been replaced by reference numbers 34 and 46, respectively, in figure 2. In figure 4, the occurrence of reference number 62 pointing to the head of the head assembly 42 has been replaced with reference number 60. In figures 11 and 12, arrow heads have been added to the lead lines for reference number 96.

These amendments to the drawings are believed to overcome the objections set forth in the office action.

#### ***Specification***

Section 4 of the office action objected to the disclosure for various informalities. The amendments to the specification provided herein are believed to overcome the objections to the specification.

#### ***Claim Rejections – 35 USC § 112, first paragraph***

Section 6 of the office action rejected claims 45-52 under 35 U.S.C. 112, first paragraph, as allegedly containing subject matter not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors had possession of the claimed invention. Applicants respectfully traverse this rejection.

More specifically, the office action alleges that the disclosure does not provide support for a "handle cam" or a "camming portion." The dictionary defines a cam as "a rotating or sliding piece in a mechanical linkage used especially in transforming rotary motion into linear motion or vice versa." Merriam-Webster Dictionary ([www.m-w.com](http://www.m-w.com)). Movement of the handle imparts rotational movement to the camming portion of the handle cam assembly. This rotational motion is transferred to the rod 50 to apply tension thereto. Applicants believe that the written description, taken together with the drawings, clearly and completely describes operation of the handle 46 to tension the rod.

The specification states:

Handle cam 46 is rotatably mounted to fence channel assembly 32 by at least one annular bearing 48. ... Handle cam 46 is operatively connected to the first end of rod fence lock 50. The second end of rod fence lock 50 is operatively connected to locking pawl 44. Locking pawl 44 is preferably constructed of a single material and slidably engages rear rail 36. ... When handle cam 46 is in its up position, there is no tension pressure applied to rod fence lock 50, and therefore, no clamping pressure applied to rear rail 36 by locking pawl 44. However, when handle cam 46 is pushed downward by an operator, the camming portion 52 of handle cam 46 provides a tension force to rod fence lock 50. The tension force applied to rod fence lock 50 causes locking pawl 44 to apply a clamping pressure to rear rail 36 and, thus, secures fence assembly 12 in place at a predetermined distance from saw blade 16.

Specification at 7. As shown in Figure 4, the rod 50 is operatively connected to the camming portion 52 (the portion of the handle cam that transforms rotary motion into linear motion) of the handle 46 at an off-center location. When the handle is moved from the up position to the down

position shown in Figure 4, the rod, and thus the locking pawl, are pulled to the left (as illustrated in Figure 4) to apply clamping pressure.

Hence, Applicants respectfully submit the operation of the handle cam is fully described and illustrated to convey to one skilled in the art that the inventors had possession of the invention at the time the application was filed.

***Claim Rejections – 35 USC § 112, second paragraph***

Section 6 of the office action rejected claims 45-52 under 35 U.S.C. 112, second paragraph, as allegedly being indefinite. Applicants respectfully traverse this rejection.

Regarding reference number 62, the occurrence of number 62 pointing to the head has been changed to reference number 60.

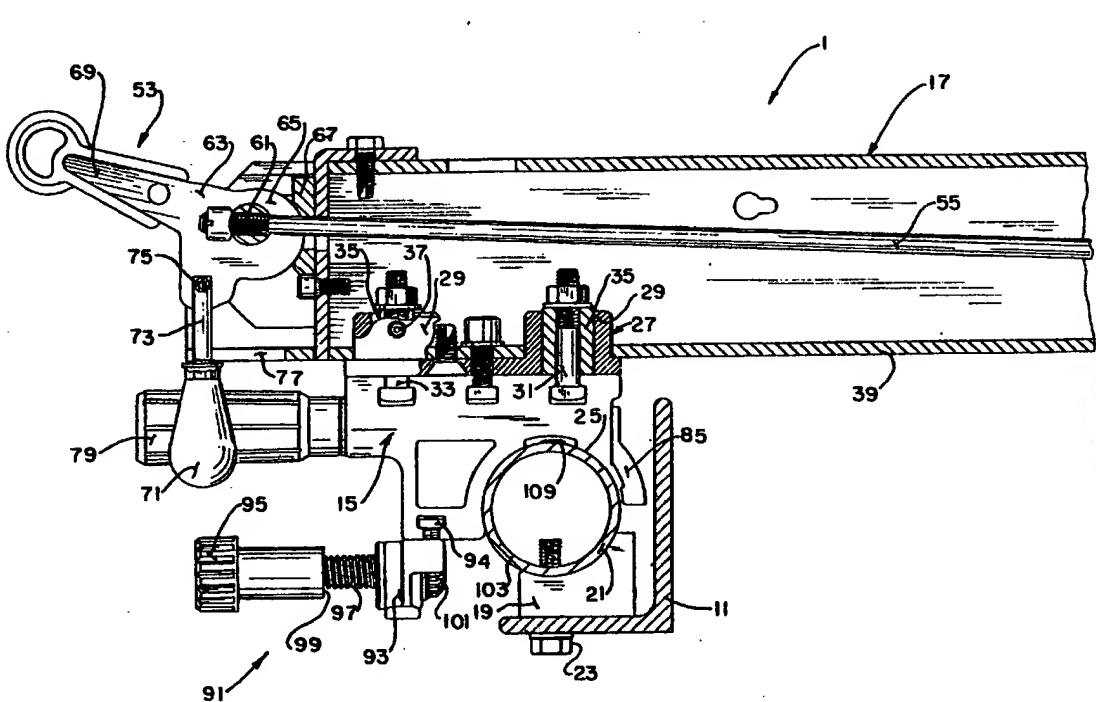
The office action alleges that “it is not clear how any ‘camming’ can occur if there is no contact by the camming surface (i.e., if there is no ‘camming’ action, then it is not clear how the surface be a camming surface).” However, in accordance with the ordinary meaning of the term “cam,” as evidenced by the common dictionary definition reproduced herein above, the handle cam and camming portion simply refer to the element that is used to transform the rotary motion of the handle into linear motion of the rod.

The claims state, “the annular bearing [receives] the camming portion such that the handle cam is rotatably supported only by the annular bearing to eliminate direct contact between the camming portion and the housing....” As shown, for example, in figure 3, the handle cam 46 is received by annular bearings 48 such that the “Handle cam 46 rotates within annular bearings 48....” Specification at 7. Thus, as recited in the claims, the handle cam is rotatably supported by the annular bearings, eliminating direct contact between the handle cam 46 and the head 60.

***Claim Rejections – 35 USC § 103***

Sections 4-6 of the '210 application final office action rejected claims 45-50 under 35 U.S.C. 103(a) as allegedly being unpatentable over U.S. Patent No. 5,181,446 to Theising ("Theising '446"). Applicants respectfully traverse these rejections.

Figure 2 of Theising '446 is reproduced below:



**FIG. 2.**

The office action admits that Theising '446 fails to disclose or suggest providing an annular bearing. Moreover, Theising '446 additionally fails to disclose or suggest providing an annular bearing that receives the camming portion such that the handle cam is rotatably supported only by the annular bearing to eliminate direct contact between the camming portion and the housing as required by the claims.

The office action suggests that it would have been obvious to add a bearing to "the rotational joint between the handle cam (69) and the rod element (55) of Theising to reduce the

resistance of the rotational movement due to friction such that the only remaining significant friction source is the *sliding contact between the contacting elements*.” As shown in Fig. 2 of the Theising ‘446 and described therein, the rod 55 connects to the spherical portion 65 at reference number 61. Thus, it appears that the office action suggests providing a bearing at the connection 61 to reduce friction of the rotational movement of the spherical portion 65 relative to the rod 55. This still leaves the sliding contact between the spherical portion 65 and the element 67 when the handle is actuated to move the rod 55.

Hence, modifying Theising ‘446 in the manner suggested in the office action fails to disclose each element of the claim. Even as so modified, there still is contact between the spherical portion 65 and the housing 67. The modified structure still does not include the spherical portion 65 being rotatably supported only by the annular bearing to *eliminate direct contact* between the camming portion and the housing. Further, if Theising ‘446 were modified as suggested in the office action, the spherical portion 65 would not rotate *within* the bearing upon actuation of the handle portion, as recited in the claims.

Theising ‘446 appears to teach away from the claimed structure. Theising ‘446 discloses “the rotatable handle body 63 includes a spherical portion 65 that rotates in a complementary shaped curved element 67 that is mounted to the first or front end of the fence channel 17.” Theising ‘446 at col. 6 lines 30-33. Thus, Theising ‘446 explicitly teaches a rotating structure that directly contacts the head assembly to translate the rotational movement of the handle to the rod. There is no teaching or suggestion of mounting the spherical portion 65 in annular bearings such that it is rotatably supported only by the annular bearing to eliminate direct contact between the spherical portion 65 and the element 67.

As noted in the background section of the present specification, an arrangement such as disclosed in Theising '446 is prone to premature wear, due to the friction between the camming portion 65 and wear plate element 67. The annular bearing structure of the present application eliminates the contact between the camming portion and a wear surface such as element 67 of Theising '446. The handle cam and annular bearing arrangement of the present invention provides a smoother action and longer life over prior art fence assemblies having a wear surface such as element 67 of Theising '446.

Since Theising '446 does not disclose or suggest rotatably supporting the handle cam only by annular bearings to eliminate direct contact between the camming portion and the head, Applicants respectfully submit that independent claims 45 and 50 are patentable over Theising '446.

Section 9 of the office action rejected claims 51 and 52 under 35 U.S.C. 103(a) as allegedly being unpatentable over Theising '446 in view of U.S. Patent No. 1,938,548 to Tautz. Claims 51 and 52 both depend from claim 50, which as noted above, is believed to be in condition for allowance. For at least this reason, claims 51 and 52 are also allowable, and a detailed analysis is unnecessary.

### **CONCLUSION**

In view of the foregoing amendments and remarks, it is believed that all pending claims of the present application are allowable. As evidenced by the above amendments and remarks, the Applicants have made a genuine effort to advance this case to issuance. The Examiner is

invited to contact the undersigned attorney with any questions, comments or suggestions relating to the referenced patent application.

**REQUEST FOR TIME EXTENSION**

Pursuant to 37 C.F.R. § 1.136(a), Applicants petition for an extension of time of three months in which to respond to the office action. The Commissioner is authorized to deduct the extension fee, and any additional fees that may be required under 37 C.F.R. §§ 1.16 to 1.21 for any reason relating to this paper, from Howrey Simon Arnold & White Deposit Account No. 01-2508/10872.0177.DVUS00.

Respectfully submitted,



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Date: 6/3/02